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NAVY DEVELOPS CAMERA FOR DETECTING SATELLITES

CHINA LAKE, Calif., Dec. 15 (AP) -- Navy scientists here have developed what they say is the first camera capable of detecting and tracking unfriendly, spying satellites.

The development was disclosed yesterday.

Until now both American and Russian satellites have been tracked best by antennas picking up their radio signals. Telescope and camera tracking has been difficult -- and impossible when the satellite is too high or too small.

But suppose a satellite has been designed to transmit radio signals only over Russia on command from Russians. Free world tracking systems would not be able to pick up these signals.

Closes Defense

To close this gap in sky defenses, Navy scientists have been working for the last six months to fashion a new kind of eye to scan the sky.

The announcement called it a "synchronized smear camera for satellite surveillance and detection." This means that when it locks on a moving object, the other points of light in the sky show up only as smears. At its present stage of development, the camera can obtain an exposure of as long as 10 minutes.

Jack T. Leininger, photo-technologist at the United States naval ordnance test station here, is credited largely with developing the instrument.

Mr. Leininger said the camera has not photographed any mystery satellites to date, but added that he does not yet have facilities to cover the whole sky at once throughout the night. It would take a bank of nine of these cameras, he said, to scan from horizon to horizon.

Mr. Leininger said his camera had taken pictures of America's Explorer IV and Russia's Sputnik III. "We have not yet tried for Explorer I and Vanguard I," he said. These are the only four man-made satellites known to be orbiting around the earth.

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Evasion Doubtful

Is it possible to build a satellite which could not be detected by cameras of this advanced type?

A source to the Nation's satellite program said this would be extremely doubtful.

"You have the problem of maintaining something like room temperature inside the satellite," he said. "Otherwise, the instruments it carries would melt under the direct rays of the sun and freeze when the satellite is in the earth's shadow. You have to give a portion of the satellite's skin a reflective surface, blocking out enough of the sun's radiation to keep it from burning up and letting in enough to keep it warm during the hours it is shaded. This reflective surface would certainly betray the satellite to a sensitive tracking camera."

Mr. Leininger's prototype camera has an f3.5 lens with a 10-inch focal length (from lens to film). It is small and cheap enough to be used in quantity around the world to spy on any spies in the sky.

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